

# How to Make Good Affordable Textbooks

David W. Lewis  
Dean of the IUPUI University Library

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“To survive and prosper, universities need to integrate technology and teaching in a way that *improves* the learning experience while simultaneously passing the savings on to students in the form of lower prices.”

— Kevin Carey<sup>1</sup>

## Introduction

When the federal government micromanages your operations you know you have a problem. The recently passed Higher Education Act mandates the provision of the ISBNs of required textbooks when students register for courses. This is micromanaging and colleges and universities have a problem. The symptom of the problem is the high cost of textbooks. The real problem is that universities are losing an opportunity to remake the way in which supplemental course materials, including textbooks, are developed, distributed, and used. As a result we are missing a chance to make the learning experience better and cheaper.

It is my belief that the broad outline of a much better way to provide supplemental course materials is clear. Operating examples of the required technology platforms exist, and it is not difficult to imagine the new social and financial structures that are required to use these platforms effectively.

This paper will propose a solution and review the problem. I believe that if we choose to make it so, meaningful change can happen. What is required is a relatively small monetary investment by America's colleges and universities and a willingness on our part to do things differently. Failure to act will mean imposing an increasingly large financial burden on

our students and result in a missed opportunity to fundamentally change the nature of the resources available for teaching and learning.

I will start with an outline of the solution and then move to a more detailed consideration of the problem and how it can be resolved.

### The Solution

Providing affordable high quality supplementary course materials, including textbooks, is really quite simple.

Delivery systems exist that can provide open textbooks free on the Web and provide a variety of robust printing options. This combination is generally referred to as the open textbook. Connexions (<http://cnx.org/>) developed at Rice University is the best example. The technology to solve the problem already exists and is well developed.

What has yet to take place is the development of the new financial and social structures needed to leverage the technology. As Clay Shirky has pointed out it is the combination of new technologies and new social structures that drives quantum increases in value in the Web environment.<sup>2</sup>

In the textbook arena, specifically, what has yet to happen is the deployment of sufficient content in open textbook systems. The most used textbook in Connexions is not Psychology 101, Algebra 1, or the Introduction to Accounting, rather it is in Music Theory. There are good open textbooks, but not the critical mass that is required to reach a tipping point. To date the primary incentive for faculty to develop open content has been altruism. This is a useful, but insufficient, motivation. What is required to create the amount of content we need is a new set of incentives. To make this happen money needs to be put on the table and it needs to be used in new and different ways.

I would propose that a not-for-profit organization be formed to provide the required textbook content. Universities and colleges would be asked to contribute to the organization. The contributions might be in the range of \$100,000 per year with an initial five-year commitment from a large university. Smaller schools would contribute less. Contributors would govern the organization.

The aim would be to have the capacity to commission the creation of one or more textbooks for the 150 to 200 most taught courses. While it is hard to know exactly what this might cost, \$25 to \$40 million does not seem an unreasonable estimate. This could be raised with contributions from as

few as 50 to 100 schools.

It is hard to be precise, but it is likely that the most taught 100 to 150 courses represent between 40% and 50% of all course enrolments and might cover the majority of courses with high priced textbooks.<sup>3</sup>

The proposed organization (maybe it would be called the Textbook Cabal, or TC) would:

1. Identify the most taught courses.
2. Establish expert review committees drawn from the faculty of participating institutions.
3. Issue and evaluate RFPs for textbooks
4. Manage contracts for content and production of the textbooks.
5. Deposit the content in one or more delivery systems.

The use of RFPs would broaden the pool of potential authors.

The organization might also provide or broker access to editorial services such as copyediting, indexing, graphics, and access to collaborative authoring tools.

In general, the payment model to authors would be flipped with the bulk of the compensation coming upfront and small or no royalties. The content would be licensed under a Creative Commons Attribution or similar open license.

Distribution would be on a platform similar to Connexions. A small fee could be collected when material is printed, say 25 cents a chapter/module, which would be invested in the organization to produce additional content and/or used to compensate authors.

The delivery platform would provide faculty with the flexibility to customize content to meet their teaching requirements both by providing the ability to choose and arrange chapters as they wish and to modify content to precisely meet their needs. This combined with an open licensing structure should lead to updated, corrected, and refreshed content. As Lawrence Lessig puts it in his recent book *Remix*, “the entity succeeds when it is architected to give the user what he wants while contributing something back.”<sup>4</sup> The faculty desire to modify content to meet their specific needs would lead to more and better content.

Authors would be provided reports on the use of the material they created that could be used to justify promotion and tenure cases.

Students would get the content free over the Web and would have options to purchase printed versions in a variety of formats as they saw fit. In the worst case the cost to students for printing should be a quarter to a third of the current list price of textbooks. In addition, students would have access to alternative textbook content should they need it.

There would be no incentive to actively discourage a used textbook market and it could function were appropriate further reducing the cost of print textbooks.

The role of on-campus bookstores would change considerably, but there is likely a role for them as on-demand print providers.

Universities would contribute because the costs of textbooks is out of control and is impacting student success. The required investment would be small and should bring large returns to students. In addition, with the federal and many state governments engaged in the issue, the funds required to make a difference is small enough that it is worth the cost if only to demonstrate the institutional concern for the issue. What is important is that universities recognize and accept that a relatively small, but sustained investment in new forms of textbook delivery is their responsibility. Looking to the Gates or Mellon foundations is the wrong approach; institutional commitment is required.

### The Problem

There are several problems with textbooks today. The first and most obvious is the cost. A Government Accountability Office (GAO) report in July 2005 documented an increase of 186% for textbook cost between December 1986 and December 2004. Overall inflation in this period was 72%. It is worth noting that this rise in textbook costs was less than that for tuition. The cost of textbooks and supplies in 2003/04 was estimated to be \$898 for first-time, full-time degree seeking students in four-year public institutions. This was 26% of the cost of tuition and fees.<sup>5</sup> The GAO report concluded that, "While there are many factors that affect textbook pricing, the price of textbooks has increased in recent years, according to experts we spoke with, as a result of the increase in costs associated with new features, such as Web sites and other instructional supplements."<sup>6</sup>

The State Public Interest Research Groups, a research group representing student interests, in a series of reports takes a different view of the causes of the problem. The titles of the reports make their point of view clear: *RIPOFF 101: How the Publishing Industry's Practices Needlessly Drive Up Textbook Costs* (January 2004, 2<sup>nd</sup> Edition February

2005); *Required Reading: A Look at the Worst Publishing Tactics at Work* (October 2006), and *Exposing the Textbook Industry: How Publishers' Pricing Tactics Drive Up the Cost of College Textbooks* (February 2007).<sup>7</sup> These reports cite publisher's practices such as frequent revision, bundling, and other tactics to increase prices and limit the used book market.

### The Textbook Market

The textbook market is large. Textbookfacts.org (<http://www.textbookfacts.org/>), a project of the Association of American Publishers (AAP) estimates that retail spending on new college textbooks in 2008 was about \$4.7 billion.<sup>8</sup> The established publishers have most of this market can be expected to defend it vigorously.

It is important to be clear about the textbook market. Textbook publishers are not evil and they are not raising their prices and trying to limit the used book market in order to make it harder for students to go to college. They are doing these things because it is their responsibility to their shareholders to maximize profits and doing so requires them to behave in this way. As the GAO report correctly points out, "because publishers, wholesalers, and many retailers are profit-seeking firms, any widespread action that would lower costs to students at the expense of profits would be met with changes in their business practices, such as changing distribution patterns."<sup>9</sup> Patrick McElroy and his colleagues reiterate this point, "Today's Big 5 publisher-dominated content industry offers limited consumer options and current distribution models minimize consumer influence over the market."<sup>10</sup> Until established textbook publishers face cheaper alternatives they will defend their markets and extract as much profit from them as they can.

There are several reasons for hope in this regard.

1. Textbook content should be a subject to commoditization. Almost by definition, the content of a textbook is common knowledge and in most cases there are hundreds, or even thousands of potential authors.
2. The cost of entry into the textbook publishing market should be falling as electronic publishing systems become more powerful and as print-on-demand becomes robust and reliable. In addition, the competitive advantage of a developed sales force, arguably one of the only remaining competitive advantages of established firms, should be declining in the textbook industry as it has in many others as Web technologies are deployed.

3. As is the case in other information-based industries, the development of the Internet makes possible new disruptive distribution strategies and economic models.

Textbook publishers claim that, “the cost of developing a new textbook and the accompanying materials can exceed \$1 million.”<sup>11</sup> The product often has very high production values. Often books are accompanied by a wide variety of supplemental materials including websites, extra exercises, and instructor materials. The material is frequently updated. The publishers argue that all of this is required and that it puts the best instructional materials in front of students. While this may be true to some extent, it is also likely that many textbooks have reached a condition Clayton Christensen calls, “performance oversupply.” As he puts it:

One bedrock finding from our research is that companies innovate faster than customers’ lives change. In other words, what people are looking to get done remains remarkably consistent, but products always improve. Thus eventually becoming too good.<sup>12</sup>

Christensen goes on to argue that this situation causes customers to refuse to pay more for the higher-end product and leads to commoditization. Given the response of many students to the current price of textbooks, it seems likely that, in many cases, textbooks have reached the Christensen’s state of performance oversupply.

Change that matters will come to the textbook marketplace only if alternatives to the current publishers are created. These alternatives need not put established firms out of business, though this may be the result. What is required is that the established firms be forced by competition to change their current business practices.

As McElroy and his colleagues argue, the established publishers are unlikely to drive this change as they are stuck with established overheads, processes and procedures, and expectations for return on investment. As they put it, “Publishers’ current knowledge management processes and procedures produce a product that requires a textbook-like price to support their expensive comprehensive solution and high direct marketing costs.”<sup>13</sup>

McElroy and his colleagues define the current situation nicely, “The opportunity exists today to begin a transformation of higher education learning content from the print era to the digital age; from a closed, publisher-dominated development and delivery system based on the textbook to an open marketplace model that empowers both consumers

and producers.”<sup>14</sup> There are signs that this is beginning to happen.

*An Alternative Approach: Flat World Knowledge.* One example of an alternative approach comes from a new firm — Flat World Knowledge (<http://www.flatworldknowledge.com/>) — that focuses on business content and is using the open textbooks model. As they say about their strategy:

Our books are free online. We offer convenient, low-cost choices for students – softcovers for under \$30, audio books and chapters, self-print options, and more. Our books are open for instructors to modify and make their own (for their own course - not for anybody else's). Our books are the hub of a social learning network where students learn from the book and each other.<sup>15</sup>

Flat World Knowledge’s model is based on giving away their core product and then selling services, including printed versions of the content and products to support the content’s use.

*An Alternative Approach: Connexions.* In addition to for-profit alternatives, a number of not-for-profit projects have been developed. The most promising is Connexions (<http://cnx.org/>) developed at Rice University. As they describe themselves:

Connexions is an environment for collaboratively developing, freely sharing, and rapidly publishing scholarly content on the Web. Our Content Commons contains educational materials for everyone — from children to college students to professionals — organized in small modules that are easily connected into larger collections or courses. All content is free to use and reuse under the Creative Commons “attribution” license.<sup>16</sup>

The Connexions model, like Flat World Knowledge, provides its content free on the Web and provides varied means of purchasing a print version. Connexions is different from Flat World Knowledge and the traditional textbook in several important ways. First, it intentionally deconstructs the textbook into modules or chapters, thereby allowing instructors to mix and match, to customize material to best meet the needs of the course they are teaching. Secondly, the material in Connexions is licensed under a Creative Commons “attribution” license. This means that anyone can modify existing modules as long as the resulting work is attributed and distributed under the same license. This licensing scheme allows for the revision, translation, or remix of content. This should, at least in theory, lead to enhancements to and refreshing of the modules.



To date the number of open textbooks in Connexions is small and, as noted above, many often taught courses are not represented.

A final attribute of the current textbook market is worth noting: faculty select textbooks, but the costs are borne by the students. Many faculty have a general concern about the cost of textbooks, but the choices they make affect them only indirectly. In the short term, it is incumbent on students to make sure faculty clearly understand the implications of their choices. In the longer term, we need to create a market where students have choices and where these choices can be exercised in ways that do not compromise pedagogy.

### What Students Want?

In *Course Correction: How Digital Textbooks Are Off Track and How to Set Them Straight*, the Student PIRGs analysis of digital textbooks, Nicole Allen defines student expectations of textbooks in the digital world, “Digital textbooks must meet three criteria – affordable, printable and accessible.”<sup>17</sup>

Allen defines “affordable” as students understand it as the net cost of the textbook, that is, the purchase price of the textbook less the amount the student can get from selling in back. Since the resale price is usually 50% of list, the goal for the cost of textbooks under new models should be 25% to 30% of the current list price of a comparable textbook.

As Allen points out, while web content is not a bad thing, it is not sufficient. She cites studies that indicate that only 33% of students are comfortable reading from a computer screen and 75% said they would prefer a printed textbook to a digital one. In addition, 60% said they would purchase a low cost printed textbook, even if the digital version were available free.<sup>18</sup> The ideal system would provide free access to a Web version of the textbook and a wide variety of printing options. The range and capacity of print-on-demand systems make this possible as both Flat World Knowledge and Connexions demonstrate. Ideally from the student perspective, the cost of printing should be only that and should not mask other charges.

Finally, Allen argues that, “Once a student buys a textbook, it should be theirs to keep and access wherever and whenever they want.”<sup>19</sup> In practice this means both appropriate licensing and convenient file formats. The trick here will be to have an economic model that is not threatened by the open distribution of the content. Any scheme that is dependent on digital rights management (DRM) will be both subject to hacking and underground distribution and to levels of inconvenience that will frustrate honest users. In addition, DRM imposes an often non-trivial cost in the



systems needed to exclude. These costs are of necessity passed on to customers. As Georgia Harper puts it, “Making digital copies scarce in an environment of ubiquitous copying requires extensive new investment (regular lobbying of Congress, license negotiations, access restrictions, enforcement actions, etc.).”<sup>20</sup>

What students want is what Connexions and Flat World Knowledge now provide. The problem is that the number of open textbooks available through these and similar systems is small. Therefore the important question is how do we create more open textbooks quickly. This brings us to authors.

## Authors

The motivations of textbook authors are certainly varied and mixed. Authors who put their work in Connexions clearly get no financial compensation and allow their work to be modified, so we know that there are at least some authors who are prepared to write at least textbook chapters solely for the public good and whatever increase in reputation the use of this work garners. This increase in reputation can be real. As Robert Steward, the author of several open textbooks in oceanography, says, “I am frequently stopped at conferences by all manner of readers, from strangers to renowned professors, who thank me for my books. Their words of thanks are worth far more than the few thousand dollars in royalties that I will not collect.”<sup>21</sup>

In general, though, most textbook authors are compensated and the money is a real motivator. Most arrangements include a payment when the text is delivered and a royalty for each new book sold. The range of upfront payments is dependent on the author’s reputation and how this is expected to drive sales, but for most textbook authors this is likely in the \$5,000 to \$15,000 range. Royalties also vary, but are generally in the range of 10% of the sale price. There are undoubtedly a small number of blockbuster textbook authors who can get rich from their textbooks. These authors create their own brand that often last long after their personal involvement with the textbook ends. For most textbook authors the income they receive is probably an important and sometime significant contribution to their income, but is probably not life altering. Money for authors matters in the production of textbook content, but it is probably not the case that big money is required.

The time required of an author to write a textbook is not a small commitment. For an individual the task can be a multi-year commitment and in most institutions textbooks are not judged to be of the same value

as other publications for promotion and tenure. The authorship of a textbook is not something that is taken on lightly.

As we look to create affordable textbooks the important question is what incentives do we need to provide to authors and are there mechanisms that might lessen the burden of textbook authorship.

One critical question is how much money is needed to develop a high quality text? I would propose that we cannot answer this question until we create a different approach to the textbook market. As noted above, at least in theory, there are a large number of potential authors, but it seems not a very open way for them to compete for authoring opportunities. I also suspect that joint authorship using contemporary collaboration tools can lower the cost in time require and change the incentives for authors to participate in the task of authoring textbooks.

To explore how this might work we will consider three scenarios for textbook authors responding to RFPs from the not-for-profit organization I have proposed.

*Scenario One: The Traditional Model - Intro to Physics.* Professor Jones responds to the RFP for an introductory physics textbook. She proposes a one-time payment that will provide her the opportunity to take a year's leave to write the book and cover her expenses for the Tuscan villa she plans to rent while working on the project. Professor Jones proposes the work be circulated under a license that allows modifications, but she wishes to encourage that suggestions for corrections or changes be channeled to her so she can make appropriate modifications on an annual basis in a way that maintains the overall consistency of the text to the extent possible. She promises updates for problem sets. Her proposal includes provisions for copyediting, indexing, fact checking, and graphics production. She promises to reference open web sites for relevant models and simulations.<sup>22</sup>

*Scenario Two: Institutional Collaboration in Nursing.* In response to the RFP for nursing textbooks, a group of eight leading nursing schools respond. They propose to develop a series of textbooks to cover the nursing curriculum for both associate and bachelors degrees. For each course a team of four to six nursing faculty from their schools will be selected to develop that textbook. They will use a collaborative writing tool to produce the initial textbooks and to manage updates. The schools propose that they be compensated for course buyouts for the faculty members for the first two years and they commit to maintain the content for a minimum of five years. Annual review and revision is anticipated, but more immediate updates will be possible. The Web version will include video and graphics developed by the participating schools. Participation

on a textbook team will be competitive and the deans of the schools plan to reward participation when considering merit pay increases.

*Scenario Three: A Managed Community in International Affairs.* In response to the RFP for an introductory textbook in international affairs Professor Garcia proposes a managed community model. He will write the initial text using a managed wiki with a group of invited contributors. He intends to keep the text up-to-the-minute with a series of moderated blogs covering different parts of the world. He also proposes having individuals with opposing political viewpoints providing an ongoing debate of the major concepts covered by the textbook. He will begin with an invited group of fellow political scientists and practitioners, but will allow other blog posts, though they will be moderated. Individuals could be invited to join the community based on these contributions. Professor Garcia proposes to use the initial start-up funding to pay for a graduate assistant to assist in managing the process and to fund the first three years of an annual three-day retreat for the community where decisions will be made on enhancements and modifications to the textbook and related features. The retreat will be held on Professor Garcia's home campus in Washington, DC and will include presentations and discussions with diplomats and other individuals working in the field.

These scenarios demonstrate a variety of ways of developing and maintaining textbook content. They also show that new forms of collaboration can be used and should be encouraged. Enough money needs to be available to both provide and incentive to authors beyond pure altruism and to allow them the resources needed to fund creative alternatives to traditional practice. I am confident that if opportunities are offered widely with an open RFP process with sufficient funding, faculty will rise to the challenge and create not just new and imaginative textbooks, but also new models for the process of creating them.

### On Openness

The structure I have proposed is open and makes content freely available over the Web. It is important to directly address the question of openness as there is a tendency, which likely arises from our experience with the economics of the print world, to think that ownership of content requires exclusion. If some universities pay to have some textbooks produced, as I have proposed, shouldn't they keep the rights to this content to themselves or extract a fee from others who want to use it? I believe the answer to this question is "no".

The reasons for openness are not solely, or even largely, altruistic.

There is a real cost to managing content in a way that excludes. These costs include much that requires human intervention, for example negotiations and enforcement, and these costs will continue to go up. The cost of giving away content based largely on bandwidth, storage, and computer processing, will continue to decline. Free access will get cheaper; exclusion will become more expensive.

However, the case for openness goes beyond cost. Open systems build value in ways that exclusionary systems do not. Steven Weber, in his study of open source software, identifies the “anitrival” nature of software code as one of its key attributes and one of the key reasons openness succeeds in this environment. As he says, “Open source turns what would have been called free riders into contributors to the collective good.”<sup>23</sup> It is easy to understand that digital goods are nonrival. Your use does not diminish mine. But for some digital goods, software code as Weber has documented, and, I would argue, supplemental course materials including textbooks, it is not simply that your use does not diminish my use. Your use will in fact enhance mine. If many faculty use open textbooks and the system allows them to modify the content, over time we can expect these changes to evolve the content so that it is made better. This experience has been documented by MIT with its OpenCouseWare project.<sup>24</sup>

Importantly the structure I am suggesting does not require a faculty member to write a whole textbook; rather she can simply modify or write a chapter or a section of a chapter or maybe provide nothing more than a sidebar. This is a much less demanding task. We can expect that this will often be done as faculty strive to enhance their teaching. There will be no expectation of compensation, but if enough faculty members do this, as the Connexion experience demonstrates they will, the result will be a growing and improving body of content. As Shirky puts it in the context of the Wikipedia:

Encyclopedias used to be the kind of thing that appeared only when people paid for them, yet Wikipedia requires no fees from users, nor payments to its contributors. The genius of wikis, and the coming change in group effort in general, is in part predicated on the ability to make nonfinancial motivations add up to something of global significance.<sup>25</sup>

The structure I am proposing has important differences from Wikipedia, but the ability of many to contribute to the enhancement of content that adds up to something significant is an important parallel.

Open content can also lead to the unexpected. A licensing structure that allows for remixes, mash-ups, translations, and who knows what, provides the opportunity for creativity to be applied to the content. Who will use what in what ways cannot be predicted. Many attempts may fail, but allowing the opportunity for the unexpected to succeed is what will ultimately make openness work. David Wiley, in his imagined future history of the OpenCourseWare movement, makes the case strongly when he says:

But to answer the specific question, if I could go back in time and give one bit of specific advice to those early open education pioneers, it would be this: Embrace the trib culture [culture where everyone, especially students, can contribute]. Embrace it as quickly and as fully as you can. Higher education does not have to remain an R/O [read only] endeavor.<sup>26</sup>

Wiley pushes the limits of openness, by arguing that open educational content will only be successful when students fully contribute. He argues that this is one of the keys to Connexions' success. In the end he may be correct, but not all projects need to start that way. I believe in the beginning variety and experimentation are needed to test Wiley's contention.

A final justification for openness is at least partially altruistic. Exclusionary systems create real, and sometimes significant, lost opportunity costs. The easy example is that students and faculty in less developed countries could benefit from access to a textbook but can't afford such access. The case is similar for individuals who are independent learners, but not students. Providing this access is altruistic. But a similar benefit could accrue to our own students who will benefit from access to a broad range of textbooks including those not assigned by their instructors. This lost opportunity cost is real for our institutions.

In my view the case for openness is clear, and concern for free riders unnecessary. Openness will grow the pie and make it better. Everyone will benefit.

## Conclusion

The current system for providing textbooks does not work. It serves neither students nor faculty. Costs are high and established publishers are not responding with new products that meet our needs. I believe change is inevitable, but unless colleges and universities act assertively, the change will be drawn out and painful.

One can reasonably debate the issue of the long-term sustainability of systems to provide open educational content.<sup>27</sup> But one thing is certain: such systems will not jumpstart themselves. They will need a push and colleges and universities have an interest in providing it.

The solution I have proposed is not expensive; it demonstrates concern for the cost burden students are carrying, and it will in a short time produce a substantial body of open textbooks that will make teaching and learning cheaper and better.

My proposal will disrupt the textbook market. Established publishers, campus bookstores, and some textbook authors will likely be disadvantaged if they do not adapt, but this will happen sooner or later anyway.

All that is required to create the change that is necessary is the commitment of 100 college and universities and a few people willing to lead and evangelize. It can and should happen.

## Notes

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<sup>1</sup> Kevin Carey, "What Colleges Should Learn From Newspapers' Decline," *Chronicle of Higher Education*, April 3, 2009. Available at: [http://chronicle.com/weekly/v55/i30/30a02101.htm?utm\\_source=cr&utm\\_medium=en](http://chronicle.com/weekly/v55/i30/30a02101.htm?utm_source=cr&utm_medium=en) (Accessed March 30, 2009 with subscription).

<sup>2</sup> See the discussion of wikis in Clay Shirky, *Here Comes Everybody: The Power of Organizing Without Organizations*, New York, NY: Penguin Press, 2008. Pages 136-137.

<sup>3</sup> At Indiana University, on both the Bloomington and Indianapolis campuses, the most taught 100 undergraduate courses account for about 40% of the total enrollments. It is likely that this distribution is consistent across other campuses and that, as is the case between the two IU campuses, the courses are similar.

<sup>4</sup> Lawrence Lessig, *Remix: Making Art and Commerce Thrive in the Hybrid Economy*, New York, NY: Penguin Press, 2008. Page 234.

<sup>5</sup> United States Government Accountability Office, *College Textbooks: Enhanced Offerings Appear to Drive Recent Price Increases*, July 2005, GAO-05-806. Page 2. Available at: <http://www.gao.gov/new.items/d05806.pdf> (Accessed March 27, 2009).

<sup>6</sup> United States Government Accountability Office, *College Textbooks* page 3.

<sup>7</sup> *RIPOFF 101: How the Publishing Industry's Practices Needlessly Drive Up Textbook Costs*, The State PIRGs Higher Education Project, 2<sup>nd</sup> Edition February 2005. Available at: [http://www.maketextbooksaffordable.org/ripoff\\_2005.pdf](http://www.maketextbooksaffordable.org/ripoff_2005.pdf) (Accessed March 27, 2009); *Required Reading: A Look at the Worst Publishing Tactics at Work*, Make Textbooks Affordable Campaign, October 2006. Available at: [http://www.maketextbooksaffordable.org/Required\\_Reading.pdf](http://www.maketextbooksaffordable.org/Required_Reading.pdf) (Accessed March 27, 2009), and Saffron Zomer, *Exposing the Textbook Industry: How Publishers' Pricing Tactics Drive Up the Cost of College Textbooks*, Student PIRGs, February 2007. Available at: [http://www.maketextbooksaffordable.org/Exposing\\_the\\_Textbook\\_Industry.pdf](http://www.maketextbooksaffordable.org/Exposing_the_Textbook_Industry.pdf) (Accessed March 27, 2009).

<sup>8</sup> Textbookfacts.org, "FAQ", Available at: <http://www.textbookfacts.org/fa/> (Accessed March 27, 2009).



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<sup>9</sup> United States Government Accountability Office, *College Textbooks*, pages 25-26.

<sup>10</sup> Patrick McElroy with Joan Leonard and Barry Beckerman, *A Generational Opportunity: A 21<sup>st</sup> Century Learning Content Delivery System*, May 2007. Page 16. Available at: <http://www.3cmediasolutions.org/pdf/RecommendedTextbookReports/mcelroypapermay2007.pdf> (Accessed April 2, 2009). While I believe the solutions proposed in this report unnecessarily accommodate publisher interests, it is an excellent assessment of the current situation.

<sup>11</sup> Textbookfacts.org, “FAQ”, Available at: <http://www.textbookfacts.org/fa/> (Accessed March 30, 2009).

<sup>12</sup> Clayton M. Christensen, Scott D. Anthony, and Erik A. Roth, *Seeing What’s Next: Using Theories of Innovation to Predict Industry Change*, Boston, MA: Harvard Business School Press, 2004. Page 12.

<sup>13</sup> McElroy, et. al., *A Generational Opportunity*. Page 3.

<sup>14</sup> McElroy, et. al., *A Generational Opportunity*. Page 16.

<sup>15</sup> Flat World Knowledge, “About Us” at: <http://www.flatworldknowledge.com/about> (Accessed March 27, 2009). One authors experience with Flat World Knowledge is reported in Kim Seidel, “Online Textbooks Deliver Timely, Real-World Content,” *EDUCAUSE Review* 44(1) January/February 2009. Available at: <http://www.educause.edu/ER/EDUCAUSEReviewMagazineVolume44/OnlineTextbooksDeliverTimelyRe/163576> (Accessed April 1, 2009).

<sup>16</sup> Connexions, “About Us”. Available at: <http://cnx.org/> (Accessed March 27, 2009).

<sup>17</sup> Nicole Allen, *Course Correction: How Digital Textbooks Are Off Track and How to Set Them Straight*, The Student PIRGs, August 2008. Page 2. Available at: <http://www.maketextbooksaffordable.org/newsroom.asp?id2=44596> (Accessed March 27, 2009).

<sup>18</sup> Nicole Allen, *Course Correction*.

<sup>19</sup> Nicole Allen, *Course Correction*.

<sup>20</sup> Georgia Harper, “OA, IRs and IP: Open Access, Digital Copyright and

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Marketplace Competition,” page 5. Available at:  
[http://wikis.ala.org/midwinter2009/images/5/5e/Harper\\_G\\_MW09handout.pdf](http://wikis.ala.org/midwinter2009/images/5/5e/Harper_G_MW09handout.pdf) (Accessed March 30, 2009).

<sup>21</sup> Robert Steward, “Some Thoughts on Free Textbooks,” *EDUCAUSE Review* 44(1) January/February 2009. Available at:  
<http://www.educause.edu/ER/EDUCAUSEReviewMagazineVolume44/SomeThoughtsonFreeTextbooks/163573> (Accessed April 1, 2009).

<sup>22</sup> Except for the Tuscan villa this is very much like the experience reported by Rob Beezer for a linear algebra textbook. See: Rob Beezer, “The Truly Free Textbook,” *EDUCAUSE Review* 44(1) January/February 2009. Available at:  
<http://www.educause.edu/ER/EDUCAUSEReviewMagazineVolume44/TheTextbookThatIsTrulyFree/163572> (Accessed April 1, 2009).

<sup>23</sup> Steven Weber, *The Success of Open Source*, Cambridge, MA: Harvard University Press, 2004. Page 216.

<sup>24</sup> Interestingly, the MIT experience of comprehensive use of open course materials has lead to a greater insight into how courses are taught across the university and has enhanced the general approach to curriculum development. See: Steven R. Lerman, Shigeru Miyagawa, and Anne H. Margulies, “OpenCourseWare: Building a Culture of Sharing,” in *Opening Up Education: The Collective Advancement of Education through Open Technology, Open Content, and Open Knowledge*, edited by Toru Iiyoshi and M.S. Vijay Kumar, Cambridge, MA: MIT Press, 2008. Pages 260. Available at:  
<http://mitpress.mit.edu/books/chapters/0262033712chap14.pdf> (Accessed April 8, 2009).

<sup>25</sup> Shirky, *Here Comes Everybody*. Page 133.

<sup>26</sup> David Wiley, “2005–2012: The OpenCourseWars,” in *Opening Up Education: The Collective Advancement of Education through Open Technology, Open Content, and Open Knowledge*, edited by Toru Iiyoshi and M.S. Vijay Kumar, Cambridge, MA: MIT Press, 2008. Pages 221–222. Available at:  
<http://mitpress.mit.edu/books/chapters/0262033712chap16.pdf> (Accessed April 8, 2009).

<sup>27</sup> The discussion by Christopher J. Mackie is a useful beginning. See: Christopher J. Mackie, “Open Source in Open Education: Promises and Challenges,” in *Opening Up Education: The Collective Advancement of Education through Open Technology, Open Content, and Open*

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*Knowledge*, edited by Toru Iiyoshi and M.S. Vijay Kumar, Cambridge, MA: MIT Press, 2008. Pages 119-132. Available at: <http://mitpress.mit.edu/books/chapters/0262033712chap8.pdf> (Accessed April 8, 2009).